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*Callitriche heterophylla*, Pursh., Upper New Rochelle, collected by Prof. E. H. Day; *Osmunda cinnamomea*, L.; var. *frondosa*, Gray, and *Equisetum sylvaticum*, L., collected at Pelhamville by E. G. Knight. From Yonkers, N. Y., collected by E. C. Howe, are reported *Centaurea nigra*, L. (BULLETIN, v. 52, vi. 56), and *Rumex orbiculatus*, Gray. E. G. B.

### Index to Recent American Botanical Literature.

*Amaryllis Treatiæ*. Mrs. Fanny E. Briggs. (Gard. Month. xxviii., (1886), pp. 23-24.)

*Botanical Necrology of 1885*. Asa Gray. (Am. Journ. Sci., xxxi., pp. 12-22.)

The death of Charles Wright on the 11th of August, and of George W. Clinton on the 7th of September, have called forth an interesting account of their work in American Botany, which Dr. Gray, from personal acquaintance and correspondence, is so well able to give. The frequent and varied botanical excursions of Charles Wright in Texas, Arizona, and New Mexico, his connection with the Ringgold-Rogers North Pacific Exploring Expedition, and his numerous explorations in Cuba, extending over a period of nine years, enabled him to make collections which are scattered through all the large Herbaria of the United States and Europe, and have provided material for publications of great value to North American botanists. But two of these appear in his own name. George W. Clinton's botanical work, beginning with three years' scientific studies as a young man, and renewed after an interval of thirty-two years devoted to law, resulted in the Clinton Herbarium for the Buffalo Society of Natural Sciences, and a Catalogue of the Native and Naturalized Plants of the City of Buffalo and its vicinity. Dr. Gray also gives a very interesting account of Edmond Boissier and Johannes August Christian Roeper.

*Cercosporæ—Supplementary Enumeration of the*. J. B. Ellis and B. M. Everhart (Journ. Mycol., ii., (1886), pp. 1-2.) Eight additional species to the ten already described in the same journal are given; six of them are new.

*Cimicifuga racemosa*, Nutt. C. G. Lloyd. (Drugs and Medicines of North America, i., (1885), pp. 244-272. Four plates, 17 figures.)

Part 8 is on the same extensive scale as the preceding ones, containing eleven pages of botanical description of the above and allied species, with a map showing the geographical distribution. We note the omission of any localities on Staten Island and Long Island, though it grows abundantly on the morainal hills in each, and Connecticut is also left blank on the map, though the text reports the plant as found there.

The portion describing the microscopic structure was prepared by Louisa Reed Stowell, and is illustrated by cross sections of the root and rhizome, with drawings of the starch grains found in the latter. It is to be regretted that the dimensions are not given in micromillimeters. Chemical constituents and analyses with the history in the Pharmacopœia complete the number. At the present rate of progress Messrs. Lloyd will require long lives to complete the series.

*Coca.*—*The Cultivation of.* Dr. Henry H. Rusby. (Therapeutic Gazette, x. (1886) pp. 14-18.)

Dr. Rusby has been engaged for several months in the study of the coca-plant (*Erythroxylon coca*), in the mountains of Bolivia, and mainly in the district of Yungas, which contains the principal coca districts of the Republic. These are situated to the east of La Paz, on the eastern side of the easternmost cordillera of the Andes, which here has an average elevation of about 16,000 feet, and is always more or less snow-covered. He gives a brief description of the flora of the region, from which we extract the following:

Descending this slope, which is extremely steep, the first coca plantations are met at an altitude of about 6,400 feet, and occur down to the 2,000 foot level. The flora of the summit of the cordillera is low and mat-like. A little lower Dr. Rusby met with some *Gentianaceæ*, among them one which he suggests may be the same as *Halenia Rothrockii*, Gray, of Arizona, accompanied by shrubby *Acanthaceæ* and *Bignoniaceæ*. At 9,000 feet orchids and *Calceolarias* begin with arborescent *Mel-*

*astomaceæ*; at 8,000 feet the first tree ferns are met, the timber trees become quite large and *Begonias* make their appearance. "From this point the vegetation begins to assume a really tropical aspect. We find many species of *Calceolaria*, *Fuchsia* and *Amaryllidaceæ*, while the variety of orchids and ferns is quite bewildering. At 6,500 feet we see the first palms, and the forest trees become buttressed giants, staggering under their loads of vines, and climbing aroids and ferns, and their branches covered with *Bromeliaceæ* and orchids."

Among the cultivated plants of the coca-districts, Dr. Rusby mentions coffee, rice, sugar cane, tobacco, maize, cotton, sweet potatoes and the ordinary garden vegetables. Of fruits, there are oranges, bananas, cocoanuts, lemons, citrons, grapes, pomegranates, figs, melons, pineapples, and several others peculiar to the region. He is of the opinion that the coca is adapted for culture in many countries, and suggests Guatemala, Mexico, the East and West Indies, India, and possibly southern Italy. Jamaica presents especially promising conditions. It is doubtful if it would grow in any portion of the United States. Several years since a small quantity of seeds were successfully germinated in Ceylon, and during the past season the first products were sold in London at a high price.

*Council Tree of the Senecas at Geneva, N. Y.* (Gard. Month., xxviii., (1886), pp. 49-51.)

The Editor of the Gardener's Monthly gives an interesting account of this noble elm, part of which is yet standing on the Old Castle farm, owned by the heirs of Mr. Jerome Lewis. It is, in fact, a double tree, the two parts branching just above the ground. Measurements made on August 21, 1879, gave the following: trunk, just above the ground, but near the crown of the roots, 25 feet; two feet above the last measurement, or about three feet above the ground, 21 feet, 3 inches; trunk of west branch, 13 feet, 6 inches; east branch, 15 feet, 2 inches, the last two measurements being five feet from the ground. Under the eastern edge of the tree is a large stone, deeply imbedded in the ground; this has a hollow scooped out towards one end, and was probably used by the Indians for pounding corn in, and is in the same place where it was used and left by them. A cut

taken from a photograph accompanies Mr. Meehan's description. One of the large branches, comprising about one-half of the tree, was blown off in a gale of wind, September 14, 1882, so that the elm has now lost its grandeur and beauty.

*Conspectus Hepaticarum Subordinum, Tribuum et Subtribuum.* R. Spruce. (Trans. & Proc. Bot. Soc., Edinburgh, xv., pp. 309-588. Plates V-XXII.)

This is the second part of the Memoir on the Hepaticæ of the Amazon and of the Andes of Peru and Ecuador, and contains the *Jungermaniæ* of sub-order I., and sub-orders II., III., and IV., *Marchantiaceæ*, *Ricciaceæ*, and *Anthocerotaceæ*, including 46 genera, comprising full descriptions of every species, with their characters, habits, and distribution in equatorial America. The author states that he has been prevented by illness from completing the Introduction which he had intended to issue with this part, hence he hopes to be able to present it as a Supplement to the work, including additional matter on the hepatic vegetation and the bearing thereon of the principal features of the region explored, with some critical remarks on certain of the genera and species.

*Curtis, Rev. Moses Ashley.—A Sketch of the Botanical Work of.* Thomas F. Wood. (Journ. Elisha Mitchell Scientific Soc., 1884-'85, pp. 9-31.)

*Cuscuta.—Notes on.* E. J. Wilkson (Trans. San Francisco Mic. Soc., Dec. 9th, 1885.)

*Dandelion.—A Study of the.* E. Lewis Sturtevant. (Am. Nat., xx., (1886), pp. 5-9.

A valuable contribution to the literature of this plant, giving the common names in eleven languages, citing authorities dating back to 1539 and 1583 for descriptions of varieties, and tracing the history of its use and cultivation as a salad in England, France and the United States. From observations conducted at the New York Agricultural Experiment Station at Geneva the author describes a dozen different form-species, figures 6 leaf-forms, and inclines to the conclusion that they are of natural origin. "Before, however, such a radical belief can receive countenance, much must be done in the herbarium study of varieties collected from

various sources, in order that we may have wild forms to which our cultivated types can be referred. Our so-called modern vegetables, introduced as novelties, often seem to be such only because we are unfamiliar with what our predecessors possessed."

*Fungi*.—*New Kansas*. J. B. Ellis and W. A. Kellerman. (Journ. Mycol., ii., pp. 3-4.) Eight new species are characterized.

*Fissidens*.—*Notes on the European and North American Species of Mosses of the Genus*. William Mitten, A.L.S. (Journ. Linn. Soc., xxi., pp. 550-560.)

Three pages of introductory remarks and references, followed by the analytical key, precede the specific descriptions. Of these there are in all thirty-nine. The key is sub-divided into: I. Forms terrestrial; II. Forms aquatic; and in the latter he restores *Conomitrium Julianum*, Mont., and *C. Hallianum*, Sull. and Lesq., to the genus *Fissidens*. "This survey is rendered possible by the recent publication of Braithwaite's British Moss Flora, and the Manual of North American Mosses."

*Flora of Virginia*.—*Contributions to the Knowledge of the older Mesozoic*. William Morris Fontaine. (Monographs U. S. Geol. Survey, vi., pp. 144, 54 plates.)

An account of the geology of the mesozoic areas, forming part I. of the work, precedes the account of the fossil flora. 47 species of plants are there described, and nearly all figured. These are divided as follows: *Equisetæ*, 5 species; Ferns, 25 species; Cycads, 12 species, and the fruit of a thirteenth; *Coniferæ*, 2 species, and three plants whose botanical affinities are doubtful. From his investigations of these plants Professor Fontaine concludes that the flora is not older than that of the Rhætic beds of the Old World, which are at the very summit of the triassic system, or the base of the jurassic. It is essentially the same as that of the mesozoic strata of North Carolina, an account of which, taken from the work of Dr. Emmons, is appended, with descriptions and figures of plants recorded by him in "American Geology," Part IV.

*Jamaica Ferns of Sloane's Herbarium*.—*On the*. G. S. Jenman, F. L. S. (Journ. of Bot., xxiv., (1886), pp. 14-17, to be continued.)

They comprise Vol. I. of Sloane's Natural History of Jamaica, which, though two hundred years old, contains several rare and only recently re-discovered species. The numbers run to one hundred and three, but these include a few flowering plants which he thought to be allied to ferns. Most of the specimens are in excellent condition. Sloane's collections in Jamaica and adjacent islands extended over a period of fifteen months and formed the foundation of the immense collections which he bequeathed to the British Museum. His classification of ferns and the synonyms used are superseded, but the author derived much benefit by studying these old types.

*Layia glandulosa*, Hook. and Arn. (Curtis's Bot. Mag., xlii., Tab. 6856. The specimen figured flowered at Kew in the open border, July, 1885.

*Martha's Vineyard and Nantucket—On the Flora of.* J. H. Redfield. (Proc. Acad. Nat. Sci., Phila., (1885), pp. 378-379.)

The northern portion of the Island of Martha's Vineyard rises into rounded hills of considerable elevation, composed of gravelly drift, strewn occasionally with large boulders. The more central portion consists of level plains of gravel covered with oaks, mostly *Quercus obtusiloba*. The general character of the flora is much like that found on the summits of the divides in southern New Jersey, though much more limited as to species. In Nantucket he had found the gravelly hills of much less height, the greater portion of the island consisting, in fact, of treeless plains. The most characteristic plant of these plains seemed to be *Arctostaphylos Uva-ursi*. The two species of *Hudsonia* abound, as do *Polygala polygama*, *Myrica cerifera*, and various *Vaccinææ*. He saw many large patches of *Corema Conradii*. But the most interesting feature is the existence here of three species of heath, possibly indigenous. Mrs. Owen, who published a preliminary catalogue of the Nantucket flora a few years ago, records *Calluna vulgaris* and *Erica cinerea* as found upon the island. Mr. Redfield did not see the locality of *Calluna*, but had the privilege of seeing that of *Erica cinerea*. This plant covers only an area of eight inches by ten, and has been known for a space of ten or twelve years. Since his visit the third species, *Erica tetralix*,

had been discovered in a locality very distant from that of *E. cinerea*. There are said to be seven or eight plants, all thriving, large and bushy.

*Mertensia Virginica*, D. C.

In the *Garden* for Dec. 26, 1885, p. 654, will be found directions for cultivating this charming plant, and a beautifully colored plate accompanies the number.

*Mistletoe in various Localities.*

In the *Gardener's Monthly and Horticulturist* for January, 1886, (Vol. xxviii., pp. 24, 25.), a number of notes from correspondents give the host plant of *Phoradendron* in widely separated localities. About Savannah, Mr. C. A. Oelschig reports it as most abundant on oaks, especially the water-oak, but had observed the parasite on pear-trees, and in a single instance on *Olea fragrans*. Mr. S. T. Walker says it is found exclusively on the oaks in Oregon. Mr. D. S. Watson notes that in Texas the mistletoe appears to have no choice, growing on almost any kind of tree. In western Texas it is particularly abundant on the mesquite and hackberry. In the vicinity of Hammonton, New Jersey, Mr. F. L. Bassett finds it mainly on *Nyssa multiflora*; he notes a single infested tree of the red maple. Another correspondent tells how he found it on the red oak near Fredericksburg, Virginia, in 1863.

My New Jersey experience with the mistletoe agrees with Mr. Bassett's report. I have seen it repeatedly on the *Nyssa*, and have the best authority for its presence on the red maple, in but two instances, however.

For additional information on *Phoradendron* see this journal, iii., p. 26; iv., pp. 12, 13; vi., pp. 64, 147, 235; xi., pp. 76, 87.

N. L. B.

*North Carolina Plants.—A Preliminary List of Additions to Curtis' Catalogue of.* M. E. Hyams.

Ninety-three additional species are reported, without localities. Errors of spelling are inexcusably numerous. (*Journal Elisha Mitchell Scientific Soc.*, 1884-'85, pp. 74-76.)

*Northern Pacific Railroad.—Notes on the Geology and Botany of the Country bordering the.* Prof. J. S. Newberry. (*Ann. N. Y. Acad. Sci.*, iii., (1884) pp. 242-270.)



The botanical parts of this interesting paper are: (1) A brief description of the forests of the Rocky Mountains. (2) Those of the Cascade Mountains, and the flora of the Lower Columbia.

*Polyporus*.—*Notes on*. J. B. Ellis. (Journal Mycol., ii., pp. 5, 6.)

*Rosa pisocarpa*, Gray. (Curtis' Bot. Mag. xlii., Tab. 6857.)

The Kew plants were raised from seed received from Prof. Sargent; they flowered in July and fruited in September.

*Sassafras*.—*Large trees of*. Dr. Gordon W. Russell (Gard. Month., xxviii, (1886) p. 22.)

West of Bridgeport, Conn., G. L. Porter measured a tree having a circumference of 78 inches, 4 feet above the ground; and reports another having a circumference of 110 inches at  $5\frac{1}{2}$  feet above the ground.

*Tendril Movements in Cucurbita Maxima and C. Pepo*. D. P. Penhallow. (Am. Journ. Sci., xxxi., pp. 46-57, Pl. V.; to be continued.)

Recent discoveries on the continuity of protoplasm have thrown more light on some studies made by the author in 1874, of the movements of the tendrils and terminal bud of the squash. After giving careful explanation of the methods pursued in growing and recording the movements, as shown by diagrams, he proceeds to explain the histology of the tendril. Three important areas were noted, running the length of the tendril, each in a depression which is noticeably greener than the rest of the tendril. To these areas the name *Vibrogen* tissue has been given, as it is to these the origin of movements are due. The subsequent movements are fully explained and torsion has been observed, contrary to statements of Sachs. The continuity of protoplasm was demonstrated most clearly in the collenchyma, of which a most satisfactory drawing will be found. The movements which bring about the formation of the double spiral are described at length and full measurements given.

*Teucrium Canadense*.—*Fertilization of*. Aug. F. Foerste, (Am. Nat., XX., p. 66.)

*Transpiration—Some Notes on Plant*. F. P. Venable. (Journal Elisha Mitchell Scientific Soc., 1884-'85, pp. 63-66.)